

IN THE CLAIMS

Claim 1 (canceled).

2. (new): A packet communication apparatus for transmitting a packet from a first network to a second, wherein the packet includes an Internet Protocol (IP) address and a first header used to compose a closed network in the first network, said packet communication apparatus comprising:

a packet generating unit which generates a second header used to compose a closed network in the second network based on the IP address and information in the first header; and

a transmitter which transmits a packet having added thereto said second header.

3. (new): A packet communication apparatus according to claim 2, further comprising:

a processing unit which replaces the first header with the second header.

4. (new): A packet communication apparatus according to claim 2, further comprising:

a route decision processing unit which decides a route to the second network according to the IP address and information in the first header.

5. (new): A packet communication apparatus according to claim 2, wherein the packet is an IP packet.

6. (new): A packet communication method of transmitting a packet from a first network to a second network, wherein the packet includes an Internet Protocol (IP) address and a first header used to compose a closed network in the first network, the packet communication method comprising the steps of:

receiving the packet; and

generating a second header used to compose a closed network in the second network based on the IP address and an information in the first header.

7. (new): A packet communication method according to claim 6, further comprising the step of:

replacing the first header with the second header.

8. (new): A packet communication method according to claim 6, further comprising the step of:

deciding a route to the second network according to the IP address and information in the first header.

9. (new): A packet communication apparatus according to claim 4, wherein the packet is an IP packet.

10. (new): A packet communication system comprising:
a first network;

a second network; and

a router which transmits a packet from the first network to the second network,

wherein the packet includes an Internet Protocol (IP) address and a first header used to compose a closed network in the first network, and

wherein the router generates a second header used to compose a closed network in the second network based on the IP address and information in the first header.

11. (new): A packet communication system according to claim 10, wherein the router replaces the first header with the second header.

12. (new): A packet communication system according to claim 10, wherein the router decides a route to the second network according to the IP address and information in the first header.